

SECTION II. INSTALLATION

5.2.1 INTRODUCTION

This Section provides instructions for installing the aspirator and transmitter on the sensor pads. These procedures assume that all support structures and cabling have been previously installed. The installation of the model H083R and model 1088 temperature/dewpoint sensors is identical.

5.2.2 TEMPERATURE/DEWPOINT SENSOR INSTALLATION

Before the temperature/dewpoint sensor is installed on the sensor pad, the aspirator and transmitter must be connected to each other using the supplied support arm and the procedures provided in table 5.2.1. The temperature/dewpoint sensor can then be installed on the sensor pad using the procedures provided in table 5.2.2.

Table 5.2.1. Temperature/Dewpoint Sensor Preassembly

Step	Procedure
	Tools and materials required: No. 1 Phillips screwdriver 5/16-inch nut driver/wrench 3/8-inch nut driver/wrench 1/2-inch nut driver/wrench No. 2 Phillips screwdriver Cable tie wraps
1	Remove aspirator, transmitter, solar shield, and support arm assembly angle brackets with attached hardware from shipping crate.
2	Referencing figure 5.2.1, assemble left and right side angle brackets as follows: <ol style="list-style-type: none"> Separate three different sized angle irons. Locate two long angle irons with an X stamped on one end. Position angle irons on work surface. Locate medium sized angle iron with an X stamped on it. Position medium sized angle iron on top of two long angle irons as shown. Using two screws and locknuts, connect angle irons. Do not tighten locknuts. Repeat steps b through e for angle irons stamped with an O.
3	Connect mounting bracket stamped with an O to hinged side of transmitter. Install two 1/2-inch standoffs securing bracket. Do not tighten standoffs.
4	Connect mounting bracket stamped with an X to the other side of the transmitter. Install two 1/2-inch standoffs securing bracket. Do not tighten standoffs.
5	Position aspirator on mounting brackets with nameplate facing outward (away from transmitter). Install four 3/8-inch locknuts securing aspirator on mounting brackets. Do not tighten locknuts.
6	Using No. 1 Phillips screwdriver, install four screws and 5/16-inch locknuts securing small angle irons to top and bottom of support brackets. Do not tighten locknuts.
7	Using 5/16-inch nut driver and No. 1 Phillips screwdriver, tighten locknuts securing medium and small angle irons to bracket assembly.
8	Using 3/8-inch nut driver, tighten four locknuts securing mounting bracket to aspirator.

Table 5.2.1. Temperature/Dewpoint Sensor Preassembly -CONT

Step	Procedure
	<p style="text-align: center;">CAUTION</p> <p>Overtightening standoffs may cause threads to break off. Take care not to overtighten standoffs when securing them to transmitter.</p>
9	Using ½-inch nut driver, tighten four standoffs securing mounting bracket to transmitter. Take care not to overtighten standoffs.
10	Position solar shield over transmitter with longest side facing aspirator (figure 5.2.1).
11	Using No. 2 Phillips screwdriver, install four screws, lockwashers, and flat washers securing solar shield to standoffs on transmitter.
12	Connect connector P1 to connector J1 on transmitter.
13	Using cable tie wraps, secure aspirator cable to support arm assembly as shown on figure 5.2.1. Be sure to leave service loop to allow removal of dewpoint sensor assembly without cutting tie wraps.

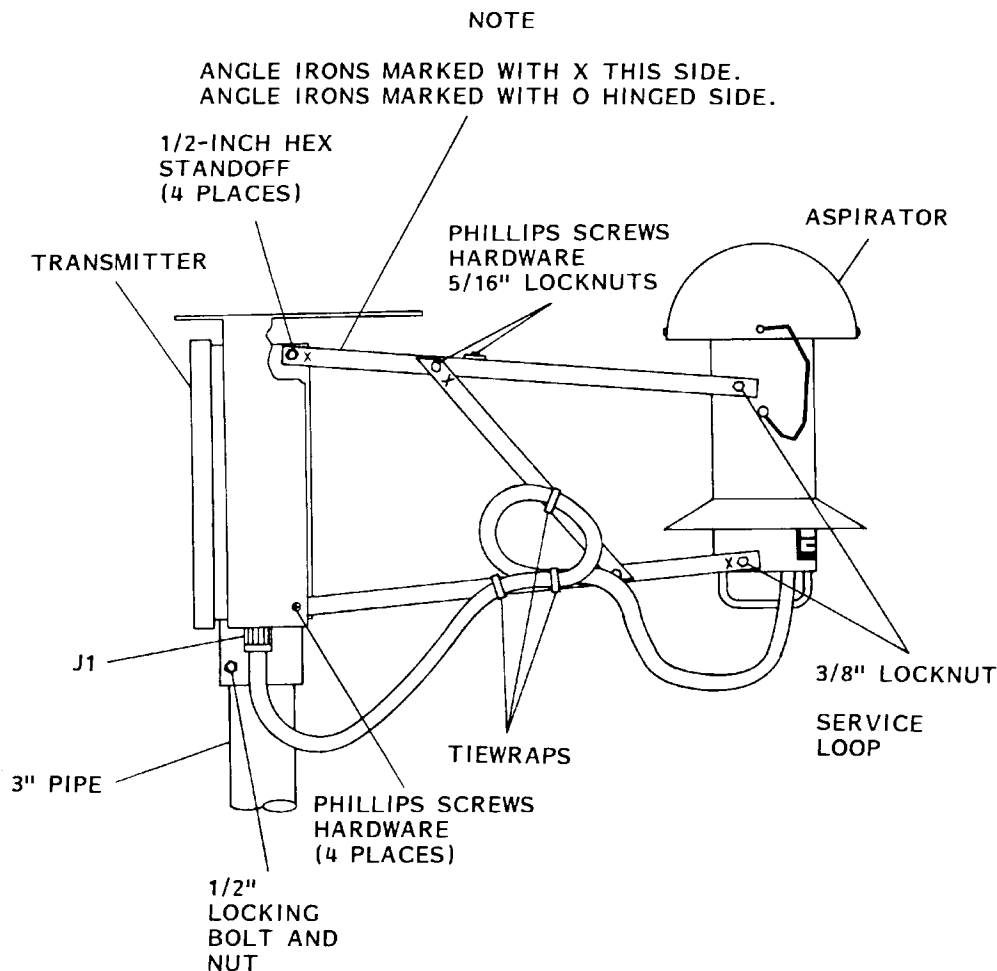


Figure 5.2.1. Temperature/Dewpoint Sensor Installation Diagram

Table 5.2.2. Temperature/Dewpoint Sensor Installation

Step	Procedure												
	<div>Tools required:</div> <div>½-inch wrench</div> <div>Large adjustable wrench</div> <div>Flat-tipped screwdriver</div> <div>No. 1 Phillips screwdriver</div> <div><div><div>WARNING</div></div></div> <div>Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that circuit breaker (located in DCP) supplying power to sensor is set to off (right) position.</div>												
1	Inside DCP equipment cabinet, ensure that circuit breaker on temperature/dewpoint sensor power control module is set to off (right) position.												
	<div>NOTE</div> <div>Sensor must be mounted so that aspirator assembly is toward the south, over either grass or bare earth (whichever is the norm for the area, no gravel).</div>												
2	Slide transmitter on sensor pad mounting pole and orient sensor so that aspirator faces south (transmitter access door opens north). Using ½-inch wrench, install three mounting bolts securing sensor to mounting pole. Tighten nuts against mounting column to lock mounting bolts in position.												
3	Open transmitter access door.												
4	Carefully slide ac power and fiberoptic cables through hole in bottom of transmitter. Using large adjustable wrench, secure flexible conduit to transmitter.												
5	Using No. 1 Phillips screwdriver, remove two screws and plastic washers securing plastic safety shield over ac terminal board.												
6	<div>Connect ac power wiring to transmitter terminal board TB1 according to the following connection chart:</div> <table><tr><td><u>Wire color</u></td><td><u>Terminal</u></td><td><u>Function</u></td></tr><tr><td>Black</td><td>TB1-1</td><td>110 vac</td></tr><tr><td>White</td><td>TB1-2</td><td>Neutral</td></tr><tr><td>Green</td><td>TB1-3</td><td>Chassis ground</td></tr></table>	<u>Wire color</u>	<u>Terminal</u>	<u>Function</u>	Black	TB1-1	110 vac	White	TB1-2	Neutral	Green	TB1-3	Chassis ground
<u>Wire color</u>	<u>Terminal</u>	<u>Function</u>											
Black	TB1-1	110 vac											
White	TB1-2	Neutral											
Green	TB1-3	Chassis ground											
7	Using No. 1 Phillips screwdriver, install two screws and plastic washers securing plastic safety shield over ac terminal board.												
8	Connect RX connector of fiberoptic cable to RX connector underneath fiberoptic module in transmitter (RX connector on module is nearest DB-9 electrical connector). Connect TX connector on fiberoptic cable to remaining connector on fiberoptic module.												
9	<div>At transmitter, set the following controls to the indicated positions:</div> <table><tr><td><u>Control</u></td><td><u>Position</u></td></tr><tr><td>Power on/off switch</td><td>On (up)</td></tr><tr><td>Mode switch</td><td>OPR</td></tr><tr><td>Autobalance dial</td><td>000</td></tr></table>	<u>Control</u>	<u>Position</u>	Power on/off switch	On (up)	Mode switch	OPR	Autobalance dial	000				
<u>Control</u>	<u>Position</u>												
Power on/off switch	On (up)												
Mode switch	OPR												
Autobalance dial	000												
10	Inside DCP equipment cabinet, set circuit breaker on temperature/dewpoint sensor power control module to on (left) position.												
11	At temperature/dewpoint sensor, set power switch to on (up) position. Ensure that display on transmitter is illuminated and that fan in aspirator is operating (fan makes an audible sound). If the correct indications are not observed, remove power from sensor immediately and troubleshoot sensor using procedures provided in Section V of this chapter.												
12	Using procedures provided in paragraph 5.5.2.6, check temperature/dewpoint sensor dc power supplies.												

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Table 5.2.2. Temperature/Dewpoint Sensor Installation -CONT

Step	Procedure
13	Using procedures provided in paragraph 5.5.2.2, inspect and clean aspirator air passage and mirror.
14	Using procedures provided in paragraph 5.5.2.3, perform optical loop adjustment.
15	Using procedures provided in paragraph 5.5.2.7, calibrate temperature/dewpoint sensor.
16	Using procedures provided in table 5.5.7, perform fan fail monitoring circuit adjustment for model 1088 sensor only. Skip this step for model H083R sensor.
17	Using six holddown clips, close access door at transmitter.
18	At OID, using procedures provided in paragraph 1.3.10, configure the system to accept sensor inputs.
19	Using procedures provided in Chapter 1, perform diagnostic testing of the sensor.
20	After allowing sensor to stabilize its operation, observe 1-minute display to verify sensor operation and data reporting.